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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,915	11/22/2000	Tatsuya Shimoda	107286	3150

25944 7590 09/21/2004

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EXAMINER	
PAYNE, DAVID C	

ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/700,915	SHIMODA ET AL.	
	Examiner	Art Unit	
	David C. Payne	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 20 April 2004 have been fully considered but they are not persuasive.

2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "optical transmission areas should only overlap one another so as to make at least two positions of the lattice section (addresses) other respective substrates correspond to one another.") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims are **1-6, 8-9** are rejected under 35 U.S.C. 102(b) as being anticipated by Austin et al. U.S. 5,200,631 (Austin).

Claims 1-6, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Regarding claim 1, Austin discloses a plurality of optical signal transmission substrate (e.g. 12A of Fig. 1) for transmitting an optical signal (Col. 4, line 59), comprising an optical signal transmission area (e.g. circuit board of Fig. 1, Col. 4, line 28) where at least one of alight emitting element (e.g. 13A of Fig. 1) for sending the optical signal to other optical signal transmission substrates (e.g. to 12D of Fig. 1) or a light receiving element (e.g. 15A of Fig. 1) for receiving the optical signal from other optical signal transmission substrates (e.g. from 12A of Fig. 1) is located so as to be capable of sending or receiving the optical signal in a direction substantially perpendicular (Fig. 1, Fig. 4, Col. ?., line 54 & Col. 3, line 13) to a surface of the substrate. Austin disclosed a divided lattice structure as claimed, see Figure 1.

Regarding claims 2 and 5, Austin discloses an optoelectronic package wherein the optical signal transmission substrate (e.g. 12(c) of Fig. 1) is used as it is held between the other optical signal transmission substrates (e.g. between 12(b) and 12(d) of Fig. 1), and wherein the optical signal transmission area (e.g. circuit board of Fig. 1, Col. 4, line 28) comprises a transmittable window exhibiting light transmittability (e.g. holes, 35 of Fig. 2B and optical via. 100 of Fig. 6) at the position where the optical signal transmitted between the other optical signal transmission substrates passes through (e.g. by allowing optical signals to be transmitted from 39 to 43 of Fig. 2B & Col. 7, lines 9-19 & Fig. 4).

Regarding claim 3, Austin discloses an optoelectronic package wherein the electrodes (e.g. conductive elastomer electrical connectors, 20 of Fig. 1, Col. 4, lines 23-25 and electrical

connection, 22 and 23 of Fig. 1) at least at a pair of the edges of the substrate (27 and 29 of Fig. 1).

Regarding claims 4, 8-9, Austin discloses all limitations as claimed in claim 1, and further discloses an optical signal transmission device (Fig. 1 and Fig. 4) composed by laminating a plurality of the optical signal transmission substrates as stated in claim 1 in such a manner that the optical transmission areas of the respective substrates overlap one another (e.g. (e.g. stack, 11 of Fig. 1 or transmitter 67 of substrate 67 overlaps receiver 64 of substrate 71, Fig. 4), wherein the light receiving element (e.g. 15D of Fig. 1) is located in any one of the optical signal transmission substrates (e.g. 12C of Fig. 1) so as to be opposed (e.g. 15D, the receiving element is opposed to 13D, the light emitting element, Fig. 1) to the light emitting element provided in any one of the other optical signal transmission substrates (e.g. 12A of Fig. 1 and Col. 8, lines 9-42).

Regarding claim 6, plural sets of the light emitting element and the light receiving element for transmitting the optical signal are located along the optical axis (e.g. optical path, Col. 2, lines 51-55 & Col. 10, lines 21-30) of one optical signal.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claim** 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Austin in view of U.S. Patent No. 5,796,714 to Chino et al (hereinafter Chino).

Regarding claim 7, Austin fails to disclose an adhesive layer between the optical signal transmission substrates, the adhesive layer being composed of an adhesive agent and electrodes for electrically connecting the electrodes of both substrates. Chino discloses an electrode structure (adhesive layer) (16 of Fig. 1) between the optical signal transmission substrates (e.g. the first substrate, 12 of Fig. 1 and the second substrate, 11 of Fig. 1), the electrode structure being composed of ultraviolet curable resin (adhesive agent) and electrodes (32 and 36 of Fig. 1) for electrically connecting the electrodes of both substrates (Col. 6, lines 9-24). Accordingly, one of ordinary skill in the art would have been motivated to incorporate such electrode structure, located between substrates, being composed of adhesive agent to provide a vertical-cavity surface emitting laser for realizing large capacity optical communication by transmitting optical information in parallel through a plurality of laser devise arranged in an array (Col. 1, lines 11-17). Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have modified the optoelectronic package of Austin with an adhesive layer between the transmission substrates, the adhesive layer being composed of an adhesive agent and electrodes for connecting the electrodes of the substrates because Chino suggests that a vertical-cavity surface module can be realized for large capacity optical communication and also provide excellent emission efficiency (Col. 25, lines 4-10).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp

David C. Payne
Patent Examiner
AU 2633